FACTSHEET

Plant Protection & Quarantine

United States Department of Agriculture

Animal and Plant Health Inspection Service

October 1995

Pink Bollworm

The pink bollworm *(Pectinophora gossypiella),* a destructive pest of cotton, currently infests much of the Southwestern United States. Pink bollworm larvae feed inside the growing cotton boll, destroying the cotton. A native of southern Asia, the pest now infests all of Oklahoma, Texas, New Mexico, Arizona, and parts of Arkansas, California, Mississippi, Missouri, Tennessee, and Louisiana. Pink bollworm is also found on wild cotton in southern Florida. It prefers cotton but will feed on okra, kenaf, and hibiscus.

The U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) continues to assist the States in controlling the pest and preventing its spread to other States. APHIS enforces a quarantine in infested areas, requiring certification for the interstate movement of regulated articles. The certificates or permits are issued after APHIS inspectors examine or treat the regulated articles.

Additionally, APHIS, in cooperation with California cotton growers and the California Department of Food and Agriculture (CDFA), is preventing the pink bollworm from infesting the San Joaquin Valley. The program involves releasing sterile bollworm moths to prevent the pest from establishing itself there during seasonal movement from infested areas to the south.

Preventing the spread of the pink bollworm means saving farmers millions of dollars in crop losses and control costs.

Appearance and Life Stages

The pink bollworm has four stages of development: egg, larva, pupa, and adult.

In early June, female moths lay 100 to 200 eggs on young cotton bolls. The eggs hatch in about 5 days and develop into larvae—the life stage that damages cotton.

Pink bollworm larvae are 7 to 10 mm long (1/4 to 3/8 inch). Their bodies are ivory with pink bands, and their heads are dark. Adult moths are grayish brown and about the same length. Their wingspan is 15 to 20 mm (5/8 to 7/8 inch).

The larvae bore into the cotton bolls and feed from 10 to 14 days on the seed. One larva eats a whole seed or parts of several seeds. When larvae finish feeding, they either drop to the ground or remain in the seed to pupate. Pupation can also take place under ground trash.

Pupae emerge as moths in 8 to 10 days. The female moths mate and start laying eggs 1 to 3 days later. Adults are active only at night and live about 10 days. The bollworm completes three to five life cycles per year.

In warmer areas, most of the larvae overwinter in cotton or okra pods left in the field after harvest. In colder climates, larvae may form cocoons in the soil for overwintering. Larvae can also stay in cotton seed after the cotton is ginned, and if the seed is not fumigated, some of the larvae can emerge from the stored seed the next spring.

History

The pink bollworm was first discovered in the United States in 1917 in Hearn, TX. It probably was shipped with cotton seed from Mexico to noninfested areas and spread as the larvae emerged from the cotton seed in the spring.

Pink bollworm may be the most destructive pest of cotton worldwide. In Egypt, China, and Brazil, it commonly causes cotton losses up to 20 percent; losses can be much higher.

Regulatory Activity

APHIS' Plant Protection and Quarantine (PPQ) program requires a certificate or permit for the following articles to be moved from a quarantine zone:

1. Cotton and wild cotton, including all parts of such plants.
2. Seed cotton.
3. Cottonseed.
4. Cotton lint from American–Egyptian varieties with the following exceptions:
   - Baled cotton lint and lint cleaner waste, if compressed to at least 22 lb/ft^3.
   - Baled cotton lint being moved for ginning from infested areas, where there are no eradication efforts, to suppressive areas, where there are

eradication efforts. The lint must be from seed cotton produced in a suppressive area. The identity of the lint must be maintained.
- Samples of cotton lint of the usual trade size. The samples may be assembled in a single package for shipment.

5. Cotton linters from American–Egyptian varieties, with the following exceptions:
   - Linters compressed to at least 22 lb/ft^3.
   - Samples of cotton linters of the usual trade size. Samples may be assembled in a single package for shipment.
6. Cotton waste produced at cotton gins and cottonseed oil mills.
7. Cotton gin trash.
8. Used bagging and other used wrappers for cotton.
9. Used cotton harvesting, cotton ginning, and cotton oil mill equipment.
10. Okra and kenaf, including all parts of such plants except:
    Okra seed
    - Canned or frozen okra.
    - Edible okra, if moved interstate between December 1 and May 15.
    - Okra consigned to California, if moved interstate between January 1 and March 15.
11. Any bollworm in any stage of life being used for scientific research.
12. Any other products, articles, or means of conveyance that are determined by APHIS to present a hazard of spreading the pest.

Pink Bollworm Suppression

A sterile release program in the San Joaquin Valley in California protects more than 1 million acres of prime cotton. Although pink bollworm infests areas to the south, the valley is free of the pest, and APHIS is assisting California to keep it that way.

Should pink bollworm moths invade the valley, a large population of sterile moths will already be in place to mate with fertile moths, breeding the pest out of existence.

Millions of moths are raised and sterilized at a special facility in Phoenix, AZ. The moths are then shipped to California for release from small airplanes over cotton fields. Sterile release occurs from May to mid-October, when pink bollworms are most active in cotton.

For the sterile release method to work, a ratio of 60 sterile moths to 1 wild moth is needed. This high ratio of sterile to fertile moths makes sterile releases impractical in heavily infested areas.

For Further Information

If you have questions about pink bollworm, call the nearest regional office of PPQ:
Western Region (916) 857-6241
Southeastern Region (601) 863-1813
South Central Region (210) 548-2750
Northeastern Region (609) 757-5070